Vacant Lot Reclamation: Community tree planting in vacant inner-city lots

Presenters

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Why urban tree planting

?

Enhance urban air quality

- Fossil fuel burning introduces a steady flow of pollution into the air we breathe.
- These pollutants may cause asthma, affect allergies, and even cause cancer if exposure is high.
- All ailments that force people to spend money and time visiting the doctor.
- An efficient and simple way to remove these pollutants are trees.

Storm water enhancement

- Trees and soils function together to reduce storm water runoff.
- Trees reduce storm water flow by intercepting rainwater on leaves, branches, and trunks.
- The intercepted water evaporates back into the air, some soaks into the ground reducing the total amount of runoff that must be managed, and, thus, slows down the storm water flow.
- Reduces the volume of water to be processed by a control facility.

Water quality enhancement

- When storm water hits hard surfaces (such as sidewalks and roads), this increases water temperature and picks up various pollutants (every thing from excess lawn fertilizers to oils and gas from cars).
- The increased volume of heated storm water flowing into our local streams or lakes leads to water quality problems.
- By slowing down and filtering the nearby water flow, trees reduce this problem.

Energy Conservation

- In the summer, trees block the sun to create shade and cool the air through evaporation of water from their leaves.
- In the winter, through the loss of their leaves, trees let the sun through to warm the earth and slow down or block the wind.
- For your house, trees serve the same function and, thus, help reduce monthly energy and heating bills.

Cost benefits

- Each of the previous four categories cost us money,whether we realize it or not.

- ***Your Water Bill.*** The storing, processing and releasing of storm water cost money. The less storm water a city deals with the less money needed for operating costs.

- ***Your Heating Bill***. Strong wind passes over your home means higher heating bills. No shade in the summer means you pay more to cool your house.

The challenges and opportunities in inner-city neighborhoods such as Buffalo, New York

The reverse of 20th city prosperity

- 20th century population growth, urban forest growth.
- Olmsted Park System introduced,
- Committed vision to a green interconnected park system.
- Residential buildup that included tree planting at the time streets laid out.
- Trees matured, residential sections benefited from amenities of urban trees.

Benefits of the population growth

- Increasing city tax base.
- Plenty of funding available for municipal operations.
- Including funds to support tree planting and its maintenance operations.
- City acquired nickname, “The City of Trees”!

City of trees

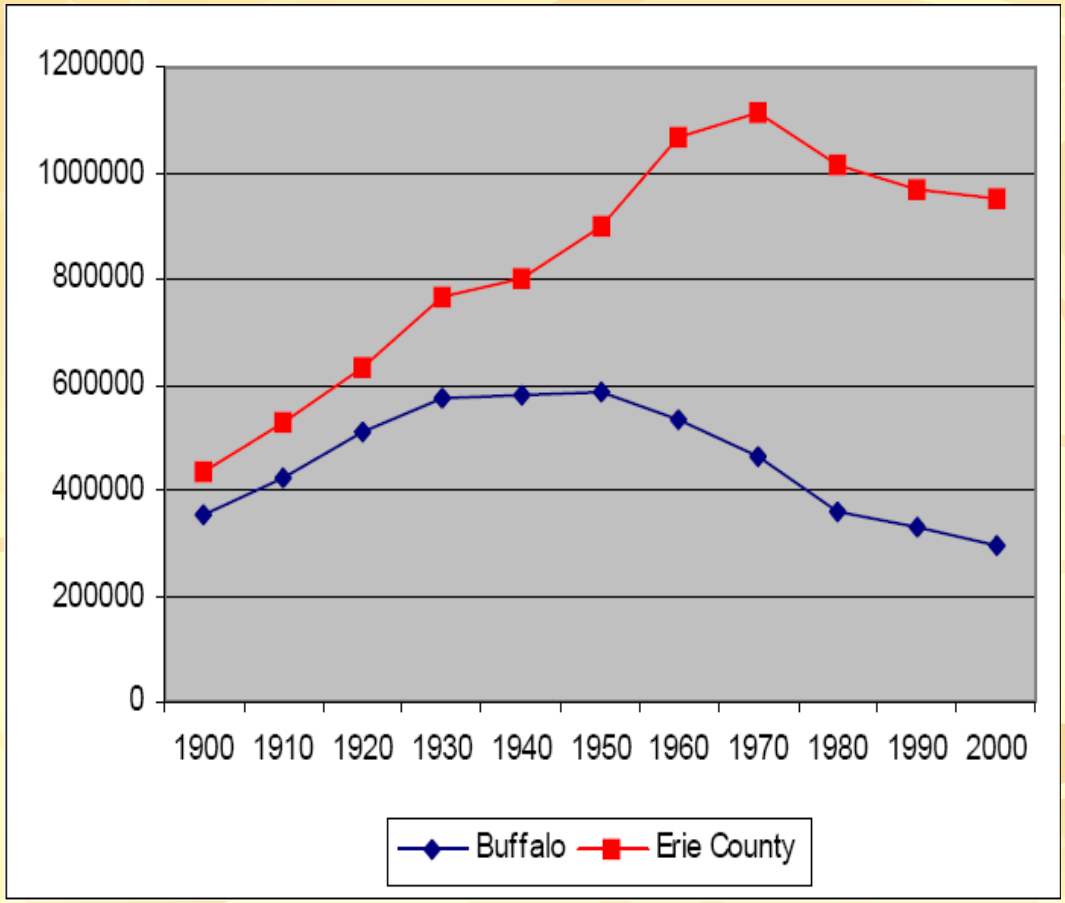
Neighborhood park system surrounded by brand new houses and young trees in front

Source: Buffalo Master Plan, *1924 aerial photo of Humbolt Park*, p. 4

A neighborhood street with elm trees, 1936

Source: Buffalo Tree Master Plan, p.5, Heritage Press Photo

Population decline



Source: Buffalo Tree Master Plan, p.7

Effects of population decline on urban forestry

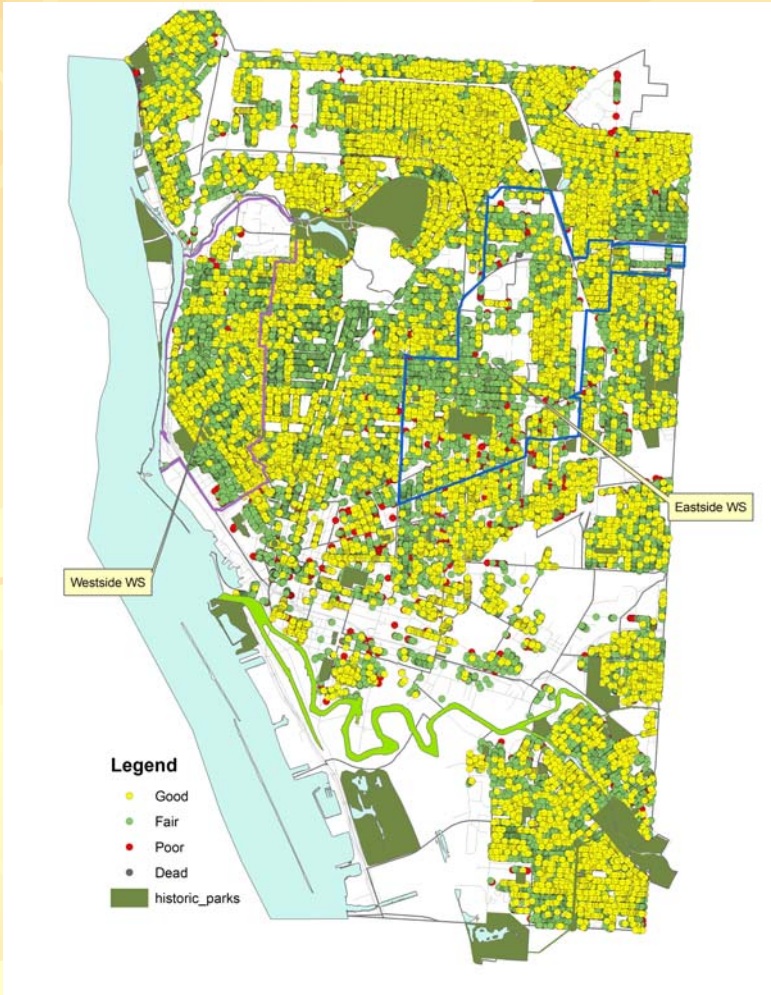
- Population decline, loss of municipal tax revenue.
- Funding for municipal operations, including public safety, public works, and forestry declined.

Source: Buffalo Master Plan, p. 7

Current status of Buffalo forestry

- 11.4% tree canopy covering 3,079 acres of the city's total 27,09 acres.
- National average tree canopy is 30%.
- 25% tree canopy is recommended by American Forestry for urban residential areas.
- To increase the Buffalo tree canopy by 5 percent, the city would have to plant 342,604 trees over the next 10 years, to reach a canopy of 25% would require planting around 850,000 trees.

Buffalo street tree condition survey



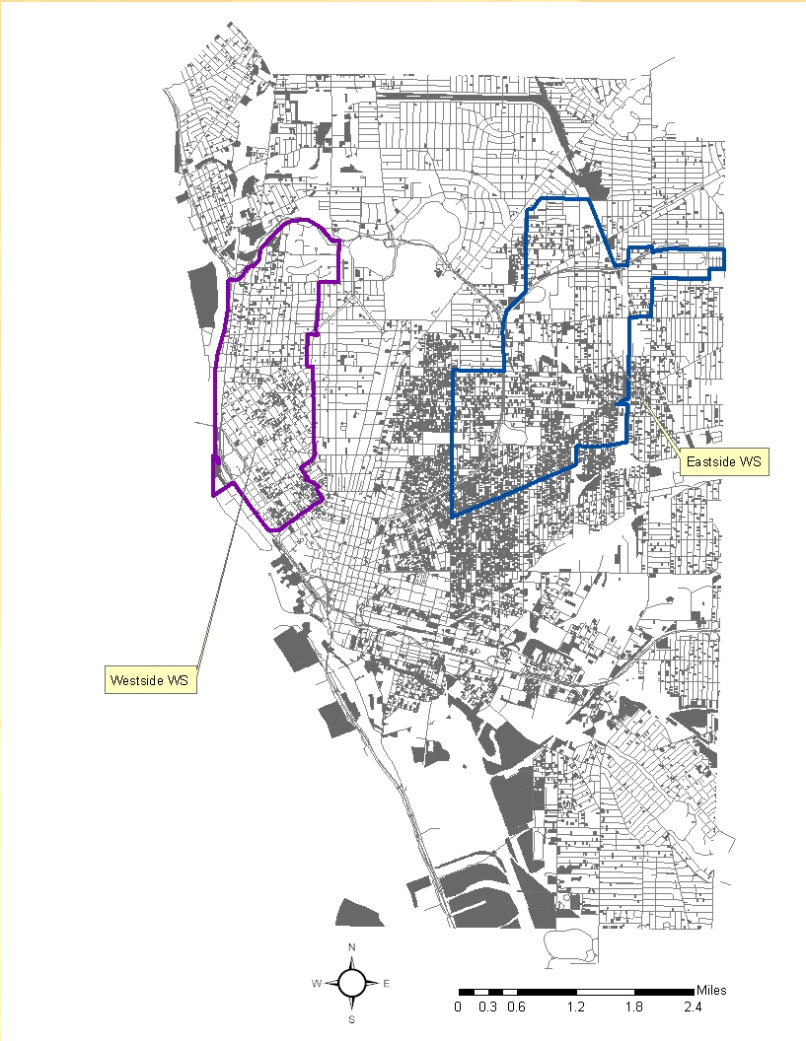
Overall tree conditions

- Approximately 20% of the trees are in good condition.
- 66% found to be in fair condition.
- 13% of the trees were found to be in poor to critical condition or dead.

Tree distribution

- Area with highest tree stocking percentage in Delaware and Niagara Districts at 82% and 76% respectively
- Area with highest large grow spaces in Delaware and Niagara Districts at 33% and 37% respectively.
- Area with lowest stocking percentage in Masten and Fillmore districts at 53% and 55% respectively.
- Area with highest small grow spaces in Masten and Fillmore at 48% and 56% respectively.
- Planting trees in vacant lots have potential to increase tree canopy by 2% to 3%.
- Overall, 31% of the city's open space is vacant lots.

Vacant lot distribution in Buffalo



Area with greatest percentage of vacant lots—Masten and Fillmore Districts

8 most pressing challenges/obstacles to lot reclamation

- Just initiated city formalized (policy) support for vacant lot maintenance and community gardening efforts.
- Great difficulty accessing water and heavy equipment.
- Difficulty getting people involved and keeping them involved.
- Poor regulation of vacant lots/accountability for their upkeep.
- Community-based planning for vacant lot reuse in initial phases.
- Uncertain about how to sustain current vacant lot projects (i.e. gardens, parks, recreation space).
- Outdated City ordinances.
- Poor communication within city government and between the City & community groups.

Buffalo, New York Weed and Seed:

a case study of vacant lot reclamation through community tree planting

Weed and Seed lot concerns- abandonment, dumping

The inner-city forestry project goals

- Increase environmental awareness of significance of lot reclamation through community tree planting.
- Help introduce block clubs to principles that promote sustainable tree management and crime prevention.
- Utilize natural resources to recapture a sense of community pride.
- Enhance the neighborhood fabric through tree planting.
- Use tree planting to seed neighborhood green projects.

Project strategy

- Planning meetings for neighborhood organizing and volunteer training.
- Train Block Clubs on Urban Forestry Principles:

A. Tree Selection/Species.

B. Tree Planting Training.

C. Tree Maintenance Training.

- Youth Urban Forestry Training.
- Community Tree Planting.

Project implementation-site selection

- Worked with committed block clubs.
- Sought out active neighborhood leader.
- Assessed maintenance of community lots.
- Looked at the history of collaborative engagement.

Which trees to plant

- Typically 100 tree specifies can grow in a local area.
- Important to focus on trees native to area.
- Native trees are more resistant to climate, diseases and insects which means less maintenance and tree replacement.
- Contact local forester or extension service for advice.
- Make a list of potential tree types.
- Seek to plant a diversity of species.
- Plan ahead on tree availability.
- Be sensitive to cost and maintenance issues.

Develop a potential list:
Tall / Medium Trees suitable for a Buffalo climate

- Northern Red Oak *(Quercus rubra)*
- Hackberry *(Celtis occidentalis)*
- White Ash *(Fraxinus americana)*
- Hop Hornbeam *(Ostrya virginiana)*
- London Planetree *(Platanus x acerifolia)* (**hybrid**)
- Lacebark Elm *(Ulmus parvifolia)*
- American Elm *(Ulmus americana)*
- Norway Maple *(Acer platanoides)*
- Silver Maple *(Acer saccharinum)*
- Sugar Maple *(Acer saccharum)*
- Kentucky Coffee Tree *(Gymnocladus dioicus)*

Short trees suitable for climates like Buffalo

- Cherry, Purpleleaf Sand (Prunus x cistena) (**hybrid**)
- Magnolia, Star (Magnolia stellata)
- Viburnum, Arrowwood (Viburnum dentatum)
- Various apple trees (moist & well drained soil necessary)

Site Visit

- Scan neighborhood with block club leaders.
- Look at the neighborhood fabric.
- Seek out potential site issues—vandalism, water availability, rats.
- Who will be the tree caretaker?

Site features to consider

- **Sunlight** exposure:

A. Street tree planting except near tall buildings will have close to full sunlight.

B. Single vacant lot sites most likely have only partial sunlight throughout the day unless it is an exceptionally wide site or multiple lots are adjacent.

- **Urban soil conditions:**

A. Normally not well suited for tree growth.

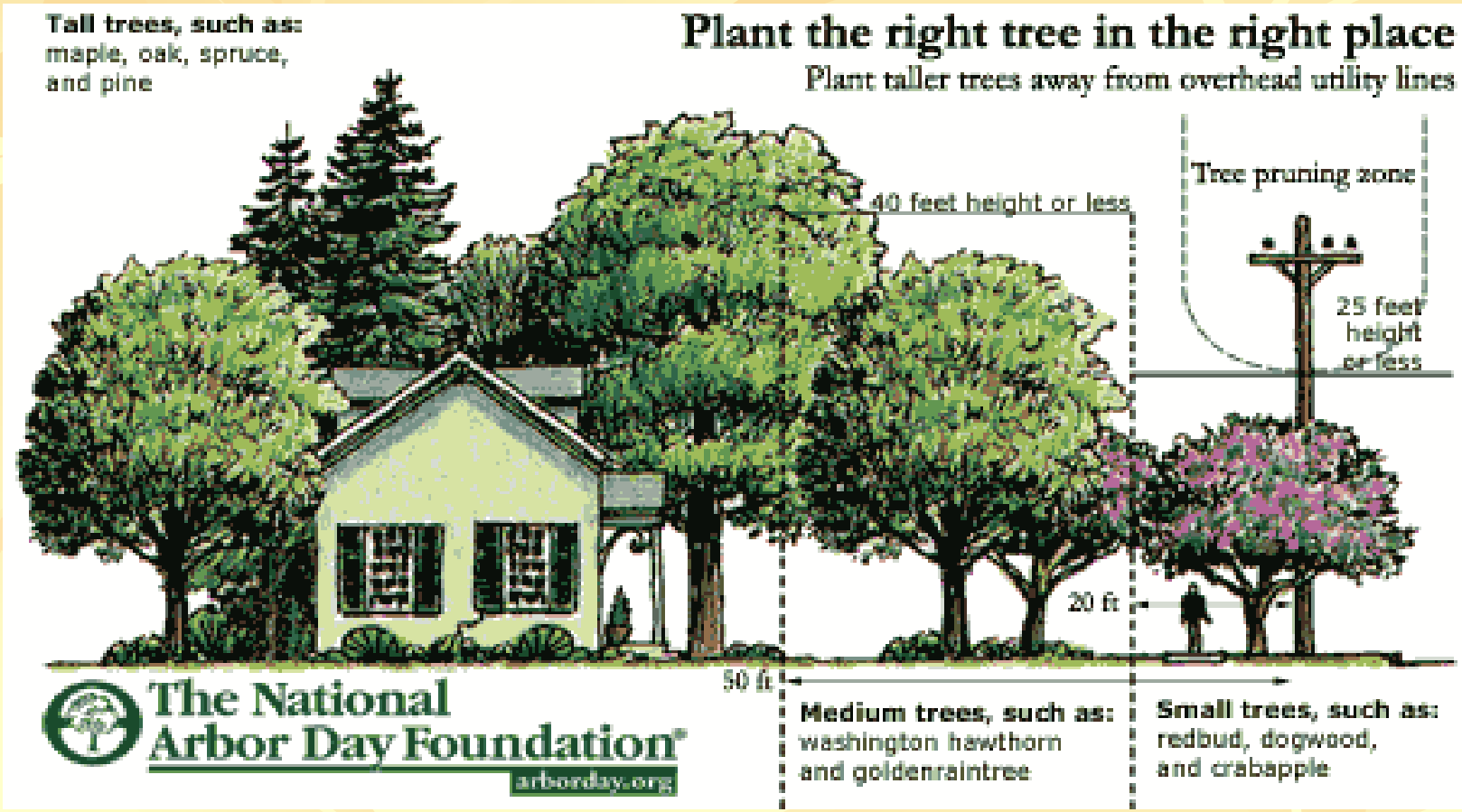
B. Acidity, compaction and lack of organic materials

C. Loosening surrounding soils, allowing a layer of organic matter to form (naturally or manually) ensure stronger tree growth.

Height / breadth Issues

- Whether it is in a vacant parcel or a street tree it is important to know the extent to which the tree can grow and spread.
- Trees can be planted underneath power lines and other obstructions as long as that species of tree does not interfere with the utilities.

Example of site consideration from Arbor Day Foundation



A strategy to introduce youth to taking care of their neighborhood

Youth Planting Trees

Dig a hole

Dig a hole that is larger than but and just deep enough for the roots. Any extra area around the roots that has been dug up will help with root growth by breaking up compacted soils.

Identify the trunk flare

The trunk flare is the where the trunk starts to widen prior to the roots.

Place tree at the proper height

Make sure that the trunk flare does not get buried but is just above the threshold of the hole

Straighten tree in hole

The tree should appear straight from all angles, not just one. Change the hole to fit the roots making sure not to put pressure by bending and twisting the roots to make the tree straight.

Fill the hole

Fill in the hole gently making sure to lightly pack the dirt around the roots. The problems that happens here are air pockets that will dry and kill the roots.

Stake the tree

If staking is necessary, place the two stakes parallel to the direction of wind and slightly angle away from tree. Pound in place until secure.

Tie the stake

The next step is to secure the tree to the stakes. Make sure that the bark is protected from tying material using hose or some other buffer material

Mulching

Notice here how the mulch is being spread flat over the roots, not in a mound around the trunk. Also note there should be a small gap of 4 inches between the mulch and the trunk.

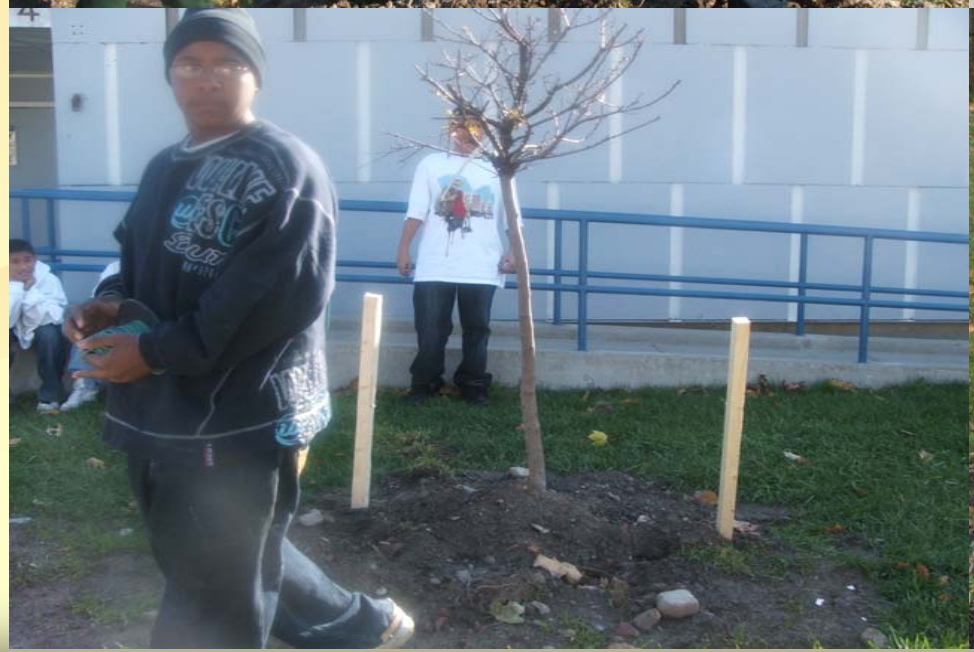
Pitfalls to watch for

- Dealing with bureaucracies.
- Out of pocket expenses, slow reimbursement.
- Tree availability constraints.
- Issues with community requests.
- Coordinating and scheduling volunteers.
- Coordinating additional resources.
- Weather!!!!!

Secrets of success

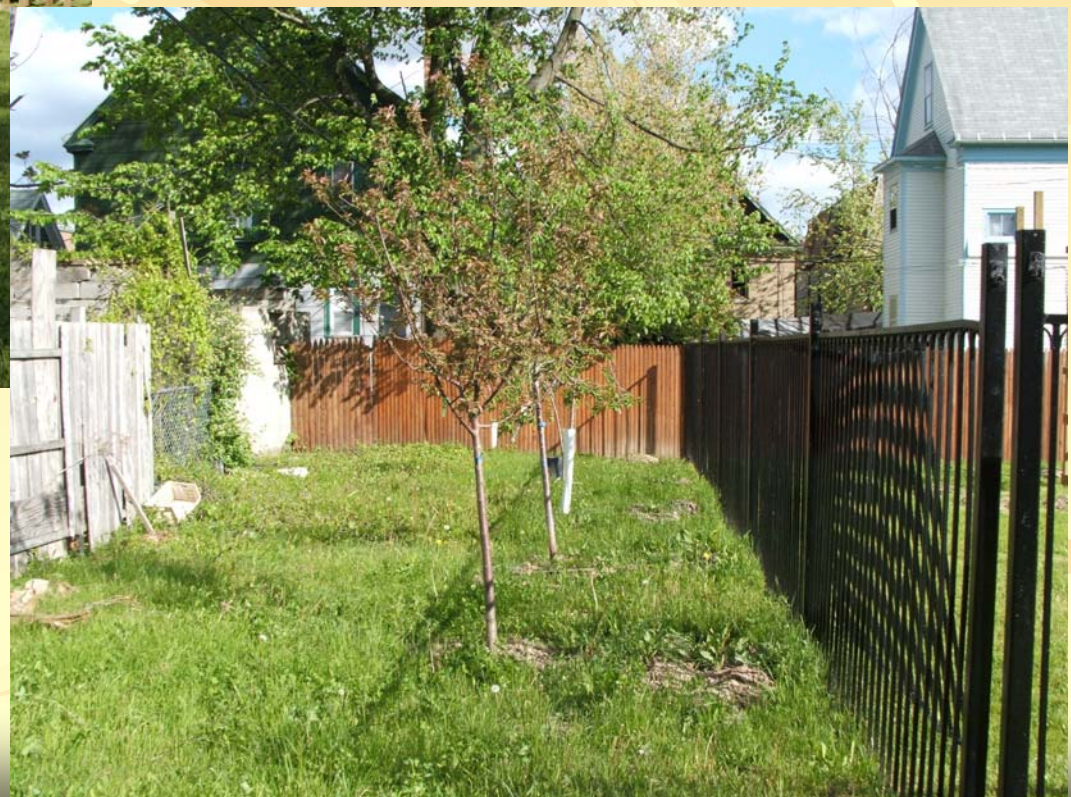
- Feed volunteers.
- Committed core of leaders.
- Local knowledge of available resources.
- Neighborhood resident buy-in.
- Resilience.
- Training of proper methods.
- Creativity.

Community planting, Fall 2005



Spring 2006-community circle intersection

Spring 2006—community playground



Spring 2006—community corner lot

Spring 2006—community garden

Spring 2006—community gazebo

Spring 2006-community center

Community center, continued

Spring 2006-city riverfront park

Use creativity-transform a dead tree back to life

- The Alive Tree
- Transforming a dead elm tree back to life

Broadway-Fillmore web log tracking of transformation

http://www.broadwayfillmorealive.org

Making a tree alive again-week one

Alive tree—week two

Alive tree-week three

Alive tree-week six

Alive tree-week six-details

Alive Tree—week nine

Alive tree-week ten

Alive tree-week ten detail

Credits

The University at Buffalo
School of Architecture and Planning
Prof. Beverly Mclean

NYS Department of Environmental Conservation

None Like You Family Outreach Center/
We Care Neighborhood Community Block Association

West Side Community Collaborative (WSCC)
Central Terminal Restoration Corporation

Broadway-Fillmore Alive

Keep Western New York Beautiful

Mayor's Impact Team

Comprehensive Employment Division, Work For Relief

Trident Landscapes

Buffalo Weed & Seed